

PATHWAYS

VOL. XI

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No. 1

TELEVISION

—A project for Class V

Television offers us tremendous prospects for development. It has great potential in the field of education particularly for basic education. Noting the widespread interest of children in television programmes, we took up television as a project for class V in the first term of 1988.

Our attempt was to explore and obtain as much information as possible about television. For this the children were advised to watch television with specific aims in mind. The class was divided into two groups—one working under the guidance of Mrs. Saroja Srinivasan and the other one with me,

To begin with, we dealt with the history and development of television. Students were asked to find out :

- * When it started in India, in the world ?
- * Which was the first television station in India/world ?
- * How many television stations are there in India now ?
- * The names of different television models,
- * How a television set functions,

We invited one of our parents, Mr. Sharma, who is a television cameraman to talk to the children. He took keen interest and gave us his valuable time. He explained about outdoor and indoor shooting, how television news is telecast, the various techniques of telecasting and how television films are made. We asked the students to watch different programmes and comment on them.

Mathematics activity based on this included an analysis of total time spent on telecasts and how much time was allocated to health, education and entertainment programmes.

Observation included looking at advertisements on television, timing their duration and thinking about the messages conveyed. This was followed by a discussion on the place of television advertisements in our life today.

Reference work involved looking up the newspapers and answering questions based on the television programmes listed there.

Children observed the television sets at home and made drawings and models. Some models showed the exact physical aspects of the

television set, including the location of the controls. Others showed pictures or details of the different serials. Measurements taken at home gave the length and breadth of different models and the area of their screens.

Language exercises included :

- * Describing a television set
- * Writing a thank-you letter to Mr. Sharma
- * Trying to write television scripts, keeping in mind sequence and camera angle
- * Writing about the "television programme I like most"
- * If I were a television announcer, and interviewing people in a television shop, e.g. salesman

The students prepared a quiz on television. They also prepared a skit in which they made up their own advertisements. The Ramjas School News was telecast in English as well as in Hindi. Vocabulary exercises in which the new words which they learnt were practised and recited, were undertaken. They learnt and recited a poem called Jimmy Jet and His Television Set.

Our Principal, Mrs. Balachandran, came up with the idea that we should send a note to parents with ideas on how to use television in a positive way. I reproduce the text of it below, for the benefit of readers.

How Parents can use Television in a Positive Way

Television has greatly helped to induce awareness and impart information and education. It has the farthest reach amongst all media and is watched by millions of people at every nook and corner of the country.

Children learn best when they are actively involved in what they are learning. T.V. becomes an active learning experience for children when they think about and question what they are seeing. This active participation helps children to develop basic skills. Parents

can play an important role in helping their children to get the most from T.V. and learn from their experiences.

1. Try to find programmes that can be fun and interesting for the entire family.
2. Help them to be critical and selective of what they watch.
3. Point out the difference between the real and the make believe specially to the pre-primary children,
4. Help them deal with programmes that are too violent or frightening. You may want to talk with them about what they saw and reassure them if they are upset. They can be helped to overcome false fears.
5. Use ideas from T.V. to talk about your child's everyday experiences and feelings.
6. When watching a programme, ask your children questions about the events and people. Ask them questions about the events and people. Ask them what they would do if they were in the same situation. Listen and respond to their ideas.
7. Use what is presented on T.V. to teach your children about other races, religions and nationalities. You may have to clear up misunderstandings or prejudices that could come from watching misleading T.V. programmes.
8. Encourage older children to make up a different ending for a story, and to explain why they prefer their own ending.
9. Use T.V. to reinforce what children are learning in school. Suggest appropriate programmes.
10. If a T.V. story or topic appeals to children, visit the local library to find books on the same subject. This encourages interest in books.

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CORRECTING WRITTEN ASSIGNMENTS

Written work forms an important segment in our school curricula. It is essential that written exercises and their correction should be taken up seriously by both student and teacher.

Students can learn from their mistakes if they have been carefully marked by the teacher.

By and large, however, teachers tend to merely underline mistakes and provide the required correction, thereby making the corrections done by students a mechanical exercise.

"Correction should not be just a device related to testing but a teaching device as well, because its essential aim is to provide information which will help us to make intelligent decisions about a possible course of action." (J. B. Carrol, *Testing the English Proficiency of Foreign Students*, 1961).

Usually, an English course has a large component of written tasks such as reports, letters, essays and paragraphs and narrative writing. There are also periodical written assignments based on text. If the written tasks have to be beneficial to the students, the correction of these, by both the teacher and the student also become very important. Therefore, the need arises for evolving an effective method of correcting written work.

Before any written tasks are given, students may be given a list of correction symbols. (Please see the list at the end of this article). They may be asked to familiarise themselves with these symbols. They are then given the written tasks. The teachers make corrections by underlining the mistakes and writing the appropriate symbols in the margin. At no stage is the correct form to be provided. The students should be first asked to number the mistakes serially and to use the corresponding numbers when they correct their mistakes. They then refer to the symbols against their mistakes and correct their mistakes in spelling and usage, consulting a dictionary if needed. For other mistakes like tenses, SV concord, reported speech etc., the students may be asked to arrive at the right answer by discussing these with other students or the teacher. Once the right answer

is arrived at, the teacher may explain the logic/principle behind it, by a question-answer method. After one or two exercises, students will gradually gain the ability to understand the underlying principles.

Where teaching schedules permit, written assignments may be conducted in smaller tutorial groups. For example, a class of 40 odd students may be divided into two groups, each in charge of a different teacher. This helps the teachers carry out corrections better.

The system suggested above has several advantages.

It prevents the correction work from becoming a mere mechanical exercise for the teacher as well as the student. It encourages self-learning. It is more demanding and therefore involving. It provides the teacher with opportunities for meaningful interaction with students, and avoids merely passive criticism. The numbering system shows the learner whether he is improving or not. For example, a student may commit 30 mistakes in the first exercise, 25 in the second, 15 in the third and so on. It helps even a weak learner to gradually overcome his difficulties in the written language as he learns at his own pace.

A Suggested List of Correction Symbols

- A —Article wrong/unnecessary/missing
- B —Badly expressed Rewrite
- C —Construction of the sentence wrong
- G —Gender wrong
- I —Ideas/Ideas wrong/vague
- N —Number (singular/plural) of subject and verb does not arise
- P —Punctuation/mistake in capitalization
- PP —Preposition wrong
- R —Repetition of idea/ideas. Remove it.
- RS —Reported Speech form wrong
- T Tense Wrong
- TT A new paragraph/sentence
- W —Wrong word. Replace it with the right one consulting the dictionary
- Wo —Wrong word order
- ? —What you have written is not clear
- Word/words missing
- 0 —Discuss with the teacher

(The above material is based on a paper presented at the CBSE Annual Conference, October 1986. We regret that as the author's name is not available on the cyclosriled hand-out, we have not been able to give this teacher due credit. Editor)

Fun with Maths

by Pearl Scott

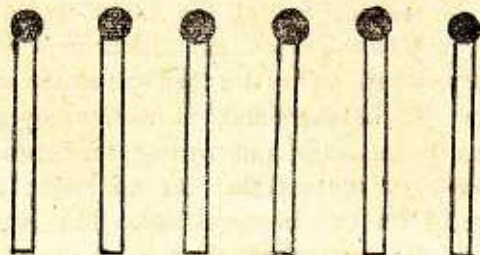
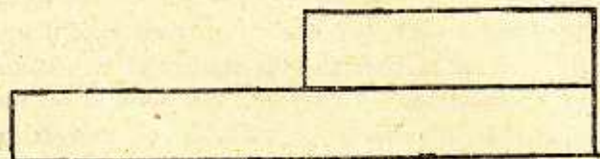
Often maths is tricky, but it can bring you a lot of fun. Enjoy it and share some of it with your pupils, family and friends. It doesn't matter if you can't answer all these questions—do as many as you can. Trying is most important—for the teacher, as it is for the student!

- Here are two magic squares. Fit in the numbers from 1 to 9 in each of them, in such a way that each row, each column and each diagonal adds up to a total of 15. No number may be repeated.

	1	
7	5	3
	9	

4		
	5	
2		6

- Divide this figure into four equal parts, using dotted lines.
- Here are six matchsticks. Without moving or changing them, add five more and make nine.
- The number 9 is the most intriguing of digits. Whatever number you multiply by nine, the sum of the digits in the product will always be nine. Try writing out the nine times table upto 9×10 , and see if you can also notice a pattern in the products. Look down the units and tens columns of the products.



(Continued on page 5)

Whoever would be a teacher of men let him begin by teaching himself before teaching others; and let him teach by example before teaching by word. For he who teaches himself and rectifies his own ways is more deserving of respect and reverence than he who would teach others and rectify their ways.

Kahlil Gibran

5. Can you draw this star without crossing over a line you have drawn or taking your pencil off the paper ?

6. Correct this equation by moving one line from one place to another : $VI + II = V$

7. Fill in the right sign to get the correct answer.

a. $4 \ 5 \ 7 \ 3 = 13$ c. $6 \ 7 \ 11 \ 5 = 29$

b. $4 \ 3 \ 7 \ = 49$ d. $1 \ 4 \ 4 \ = 8$

8. Arrange twelve apples so that they will be in straight lines with five apples in a row,

9. This is called number weaving. Fill in the blanks,

$$37 \times 3 = 111$$

$$37 \times 6 = 222$$

$$37 \times 9 = 333$$

$$37 \times 12 =$$

$$37 \times = 555$$

$$37 \times =$$

10. Calendar Mathematics :

Take a three digit by three digit square, for example ;

1	2	3
8	9	10
15	16	17

Add the numbers along each diagonal, namely :

$$1 + 9 + 17, \text{ and}$$

$$15 + 9 + 3$$

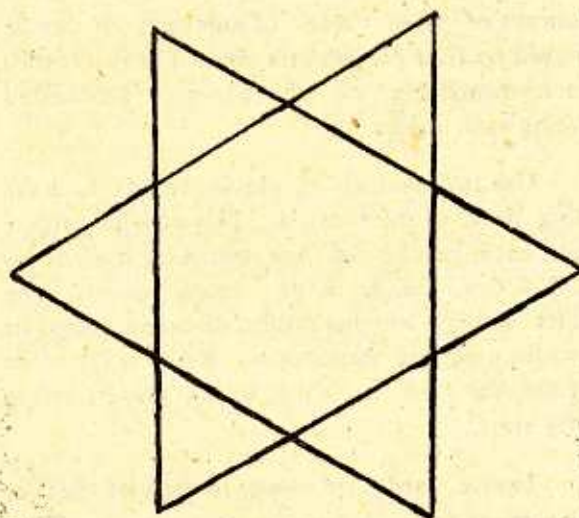
and along the central row both horizontally and vertically, namely :

$$2 + 9 + 16, \text{ and}$$

$$8 + 9 + 10,$$

In each case the result is the same. Try this for other groups of numbers.

11. Finally, can you write six ones in a row, so that they will add up to 24 ? You can use the plus sign.



1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

One-derful! I'm sure you've enjoyed these teasers. Answers to those which you might have had problems with are on page 7.

HEKATON

- A card game for children

Teachers of primary classes, will find this an interesting way of getting their students to practice addition, at the same time re-inforcing the concept of place values of numbers. It can be played by four players at a time. The two teams, each consisting of two partners are seated facing each other.

Use two packets of playing cards to make up a deck of fifty cards. This consists of five sets, each having an Ace (which is used as 1), 2, 3, 4, 5, 6, 7, 8, 9, King (used as 0). The suits namely whether clubs, diamond, hearts or spades used are immaterial. Explain the value of the Ace and the King to the players before they start.

Twelve cards are dealt to each of the four players and the remaining two are placed face up on the table. Each contestant plays one card per turn, until, all his/her cards have been used up.

The idea behind the game is for the contestants to try and complete "tricks" whenever possible. Each trick consists of a number of cards arranged on the table, either to form 100, or add up to 100 or a number that is a multiple of 100. This resultant number is credited to the score of the player making the trick. The cards used in the trick are picked up and placed on one side and the next player plays a card on an empty table.

The following examples will make the methods of play clear to the reader.

Example 1: The cards on the table are 2 and 0 (King). The next player places another 0 (King) alongside and the number now reads 200. This form of simple arrangement is the easiest way of making up a trick.

Example 2: The cards on the table are 9 and 8. The Next player places a 2 on the table in

the 'units' column. Thus the cards may be arranged as

$$\begin{array}{r} 9 \ 8 \\ 2 \\ \hline 10 \ 0 \end{array} \quad \text{or} \quad \begin{array}{r} 9 \ 2 \\ 8 \\ \hline 10 \ 0 \end{array}$$

their total adding up to 100. The same idea of arranging cards according to their place value can be extended further, as shown below:

$$\begin{array}{r} 5 \ 3 \ 9 \ 8 \\ + \quad 2 \\ \hline 5 \ 4 \ 0 \ 0 \end{array} \quad \begin{array}{r} 5 \ 3 \ 9 \ 2 \\ + \quad 8 \\ \hline 5 \ 4 \ 0 \ 0 \end{array}$$

With practice the players will begin to explore such possibilities. They will realise that while the units and tens digits have to add up to 100, they can increase their scores substantially, by placing higher value numbers in the hundreds or thousands place.

Example 3: A player may place a card in the tens place, the zero of the number being understood. Thus if the table has a 1 and a 0 a 9 may be added in the following ways:

$$\begin{array}{r} 1 \ 0 \\ + \ 9 \\ \hline 1 \ 0 \ 0 \end{array} \quad \text{or} \quad \begin{array}{r} 9 \ 0 \\ + \ 1 \\ \hline 1 \ 0 \ 0 \end{array}$$

$$\begin{array}{r} 6 \ 0 \\ + \ 3 \\ \hline 9 \ 0 \end{array} \quad \text{followed by} \quad \begin{array}{r} 6 \ 0 \\ 3 \\ + \ 2 \ 1 \\ \hline 3 \ 0 \ 0 \end{array}$$

Note that the lower cards may be repeatedly placed in positions further to the left, as shown in the second addition above. Clever positioning of the cards can increase the totals.

Example 4: Suppose the table contains a 1, 2, 2, 3, and 4. The next player can use a 7 from his hand and arrange the cards as follows. This is one of many arrangements which add up to 100.

$$\begin{array}{r} 31 \\ 27 \\ 42 \\ \hline 100 \end{array}$$

Example 5. While the usual aim of the player will be to make the units column add up to 10 and the tens column add up to 9, other variations are possible.

$$\begin{array}{r} 76 \\ 15 \\ 9 \\ \hline 100 \end{array}$$

Here the units column adds up to 20, while the tens column adds up to 8.

The first team that reaches a total of 10,000 or more points is the winner. As soon as it is reached, the game is over. If however, all the cards are played from the hands before the total reaches 10,000, a new round is dealt, the cards remaining on the table being placed up without scoring.

The same game can be played by two, each player having 6 cards. As each player uses up a card, he picks up one from the deck. The last six cards are played out to end the game. Other rules are the same,

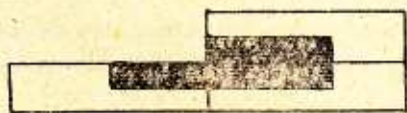
ANSWERS TO FUN WITH MATHS

5. Start at any vertex of the star, proceed along the outer lines joining the vertices and then draw the inner hexagon.

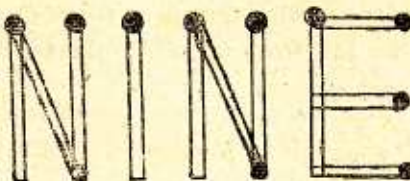
6. The answer could be $VI - II = IV$ or $VII - II = V$

11. $11 + 11 + 1 + 1 = 24$

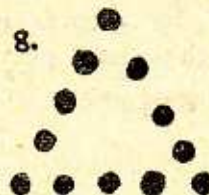
2.



3.



8.



STOP ! CHILDREN IN SCHOOL !

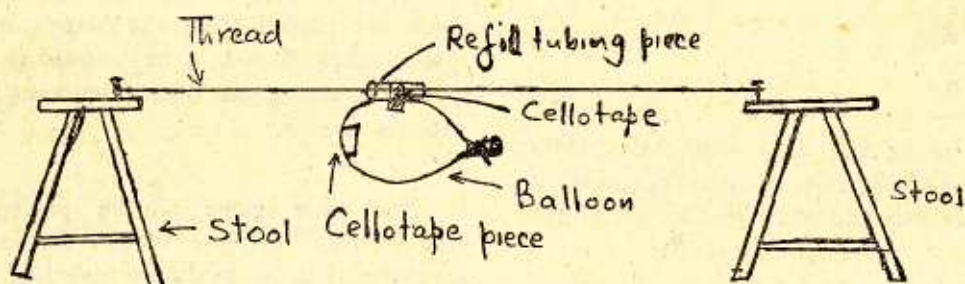
SMILE AND PROCEED

Here is a quick self-check on your *image* as a teacher. Ask yourself these questions. Answer them honestly and see what you can do to change your students' image of you-their teacher.

1. *Praise* is one of the most important aspects of teaching. Accentuate the positive; don't merely condemn the negative behaviour. Did you praise any students today?
2. The best thing to spend on children is *time*. Children do not require a lot of *attention*; it is the *quality* that counts. Did you spend time with or pay special attention to any children today?
3. *Inconsistent discipline* is the worst kind. Be frank, fair, honest and loving-but be *firm* and *consistent*. Laws too gentle are seldom obeyed, too severe seldom executed. Analyse the discipline problems you faced today.
4. When you are working with children, you just have to have *fun* with them, once in a way. A smile, a joke or a game lightens learning. Did you try that today?

ACTIVITIES WITH BALLOONS-I

by Dr. Lalit Kishore

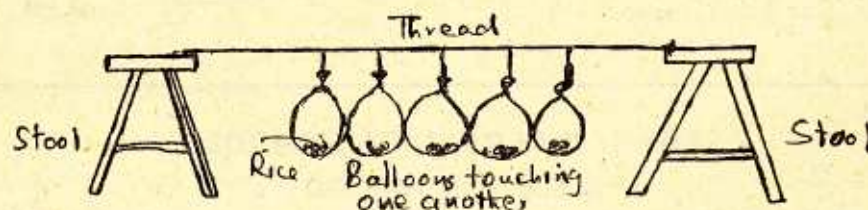


Activity 1 : The Action-Reaction Principle

Take a big balloon and inflate it fully. Tie its mouth tightly with a piece of thread. Stick a piece of cellotape on the balloon diametrically opposite its mouth. Now, attach a small piece of plastic refill tube on the body of the balloon with the help of a cellotape piece as shown in the figure above. Pass a long sewing thread through the refill piece and tie the free ends of

the thread to two stools separated by a distance of about 2 metres.

Prick the balloon at the cellotape piece with a sharp needle. The balloon will move in the direction opposite to that in which the air from balloon escapes. This illustrates Newton's third law of motion which states that to every action there is an equal and opposite reaction.



Activity 2 : Propagation of A Disturbance

Take ten balloons and put equal numbers of rice or wheat grains into them. Suspend the balloons with threads on a stick placed across two stools or that they touch each other. Flick

the first balloon with your finger. You will see the disturbance travelling from one balloon to the next reaching the last one.

Activity 3 : Frictional Electricity.

Take a small thin walled balloon and inflate it fully. Rub the body of the balloon with a dry cotton cloth piece several times.

Place the balloon against the wall or blackboard. The balloon will stick to the wall or board due to electrostatic attraction caused by induction.

Activity 4 : Electrostatic Repulsion

Take two balloons and inflate them. Tie their mouths tightly with threads and attach one metre lengths of sewing thread to each of the balloons. Rub the balloons with a dry cotton cloth piece several times.

Hold the free ends of the threads in your hand. You would see that the two balloons stay apart due to the force of repulsion between like charges.

Activity 5 : Vibrations Produce Sound

Take a big balloon and put some wheat or rice grains in it and inflate it fully. Suspend the balloon on to a stand with a piece of thread.

Touch the balloon with a sounding tuning fork. You will see that the balloon starts oscillating and produces sound. This shows that a sounding body is always in a state of vibrations.

Activity 6 : Air Has Weight

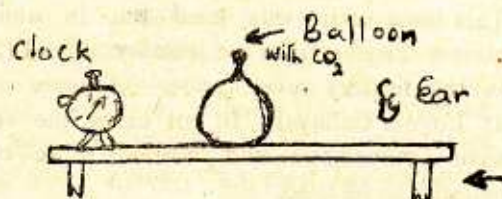
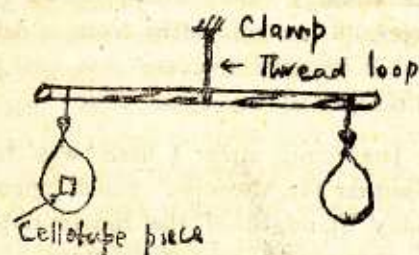
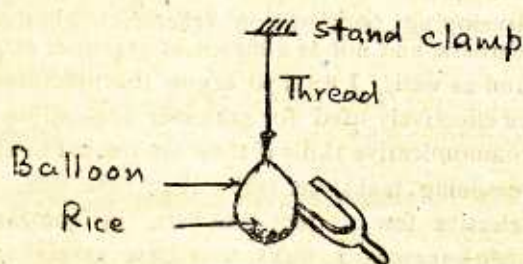
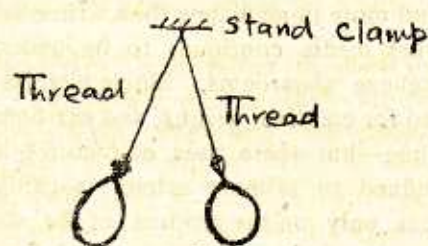
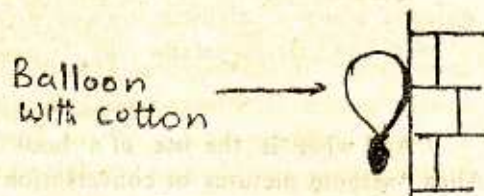
Take a plastic straw and tie two inflated balloons one at each of its two ends. Stick a piece of cello-tape on one of the balloons. Loop up the straw with a piece of thread and adjust the thread slightly so as to balance the two balloons.

Prick the cello-tape piece on the balloon with a sharp needle. The straw will lose its balance and the side with the inflated balloon will tilt down, indicating thereby that air has weight.

Activity 7 : Refraction of Sound

Take a balloon and inflate it with carbon dioxide gas. Suspend the balloon from a stand and keep a stop-watch on one side of it at a distance of 20 cm from the balloon.

Move your ear toward the balloon from the other side from a distance of one metre. You would see that the loudest sound is heard at one point only.



This is due to the carbon dioxide filled balloon working as a lens and causing refraction.



CARTOON STRIPS AS COMMUNICATIVE MATERIAL

— by Michael Joseph

"And what is the use of a book" thought Alica "without pictures or conversation?" One might ask this of ELT classes as well. It is common knowledge that pictures stimulate the mind more immediately than written texts, yet the visual media continues to be under-utilised in language classrooms. Single pictures are often used for creative writing, and cartoons for story telling—but these uses of pictures are usually confined to primary school teaching, tend to focus only on the product of the students' discourse and not on the process of discourse construction, and finally they are seen as means for developing composition (rhetoric) abilities of learners, and not as a means of grammar acquisition as well. I want to argue that pictures can be effectively used for grammar acquisition and communicative skills if they are treated as closed reasoning tasks, i.e. tasks that have one, or a selective few correct answers, in contrast to open—reasoning tasks that have several acceptable answers which are plausible rather than correct. The comic strip from a newspaper is suitable material because it is easily available and is fairly short.

The comic strip I used was taken from 'Mandrake the Magician' which appears in the Sunday Standard of the Indian Express. The strip shows that part of the story where Mandrake and Lothar are in the mouth of killer whales. This same strip was tried out in number of classes ranging from the primary school (Std IV) to the tertiary level (under—graduate students at Loyola College). In all cases the students were enthusiastic and wanted more of such material to be used.

How the cartoon strip was used

STEP A : Instructions to students

1. Tell the class they would have to work in groups on the same cartoon strip.

2. They would be allowed to look at the pictures for 5-10 minutes after which the pictures would be taken away and they would have to answer questions based on them. They would have to write the answers individually.
3. To assist them to answer the questions they would need to observe the pictures carefully, discuss with each other and make notes. They should use these notes to help them to answer the questions.

STEP B : Group work on cartoon strip

1. Distribute cartoon strip.
2. Observe students, clarify their doubts.

STEP C : Individual work on Questions based on the cartoon strip

1. Distribute questions (in the form of handout)
2. Encourage questions of clarification on handout and interact with the students.

STEP D

(in the next class)

1. Teacher uses contradictory answers of students to provoke further discussion, (The comic strip may be shown to the students again and they may refer to it while answering)
2. The teacher could provide the background to the comic strip OR make the students construct a story (making a movie in groups) in groups. This could be more advantageously used with students with a higher level of linguistic ability.

HANDOUT

I SPOT THE RIGHT ANSWER

1. There are only two women in this comic strip. TRUE/FALSE
2. The women in picture 1 look: a) happy; b) shocked c) sad; d) angry,

Utilising discourse analysis to increase interaction

The advanced learner (A stream) produces a more coherent story that incorporates all the information in the pictures as compared to the initial learner (C stream and primary school). But this incompleteness of the story by the initial learner (with whom after all we are more concerned) can be utilised by the teacher to increase interactive exchanges with the students, so crucial for acquisition of language.

So an incomplete story, contradictions between students, factual errors are utilised by the teacher to increase interactive exchanges with the students. The cartoon strip like any closed reasoning task (that is where there is one correct answer) allows the teacher to use the distorted versions of the students' story to reach the correct version through teacher-pupil interaction. Such interaction makes available the target language (teacher's language) to students while they are using their own language and concepts to construct the story.

Materials that work for the learner, teacher, and teacher as researcher

My experience of using these pictures showed that the pictures were exciting and this

catered to the emotive aspects of learning, but the tasks on the pictures required observation, inferential and narrative skills.

The cartoon strip worked for the learners — it lasted for a whole hour, and could easily be extended by another half an hour or more if the teacher utilised the answers of the students for the next class. But it also worked for the teacher — in the sense that the material was easily available, the questions were not difficult to generate; a 'little' material went a 'long' way in terms of classroom interaction, the teacher found it as exciting to use these pictures as the learners did; it gave the teacher plenty of time to observe how learners cope with such material, it allowed the teacher to study the discourse production (oral and written) of the learners and use these as further sources of material; and finally the learners' stories allowed the teacher to perceive the way learners cognize pictures. In short, the materials were motivating and manageable for the learners, the teacher, and the teacher as researcher.

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BOOKS

कबाड़ से जगाड़

Little Science

Written by Arvind Gupta

Lay-out and Illustrations

by Avinash Deshpande

Published by—Eklavya, Bhopal

An interesting bi-lingual (Hindi/English) presentation providing ideas for innovative experiments which help children learn principles of science and mathematics by "doing" and "experiencing". It takes advantage of the natural curiosity of children and and to quote from the introduction :

Children are eternal explorers. In their free moments they are always experimenting and improvising. They are always making and inventing things out of odds and bits and trinkets. They learn a great deal from ordinary, organic things found around the house. The main thing about scrap is that children can use it freely without adult admonishment.

A valuable addition to the library of a teacher on the look-out for ideas.



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